This listing of claims presented below replaces all prior versions and listings of claims in the application.

Listing of Claims

IN THE CLAIMS

Claims 1-17 (Cancel)

18. (New) Method to evaluate the integrity of chromatin/DNA of sperm cells of an animal comprising:

a) treating a sample containing the sperm, with a solution of DNA denaturing solution,

b) a single treatment step of treating the sample in the solution obtained in step a) with a lysis solution to extract nuclear proteins of the sperm cells, wherein the lysis solution does not contain protein denaturing detergents, and

c) evaluating the integrity of the chromatin/DNA of the sperm cells based on measurement of halo size of the sperm cells.

19. (New) Method according to claim 18, wherein step a) precedes that of b), or precedes steps b) and c).

20. (New) Method according to claim 18, wherein the lysis solution comprises a non-ionic non protein denaturing detergent.

21. (New) Method according to claim 20, wherein the non ionic detergent is selected from the group consisting of toctylphenoxypolyethoxyethanol (Triton X-100); N , N-bis(3-D-Gluconamidopropyl) cholamide (bigCHAP); Brij(r) 35 P; N-decanoyl-N-methylglucamine; digitonin; dodecanoyl-N-methylglucamide; heptanoyl-N-methylglucamide; branched octylphenoxy poly (ethyleneoxy) ethanol (Igepal CA-630); N-Nonanoyl-N-methylglucamine; Nonidet P 40; N-Octanoyl-N-methylglucamine; Span 20

solution; Polysorbate 20 (Tween 20) and a mixture thereof.

22. (New) Method according to claim 18, wherein the lysis solution comprises sodium chloride between 1 and 3M, dithiothreitol (DTT) between 0.001 and 2M, 2-amino-2 (hydroxymethyl)-1,3-propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.

23. (New) Method according to claim 18, wherein the lysis solution comprises 2.5M sodium chloride, about 0.2M DTT, about 0.2M Tris, about 1% Triton X-100 and a pH of about 7.5.

24. (New) Method according to claim 18, wherein the DNA denaturing solution is an acid solution.

25. (New) Method according to claim 24, wherein the DNA denaturing solution comprises an acid selected from hydrochloric, acetic, nitric acid or a mixture thereof.

26. (New) Method according to claim 25 wherein the DNA denaturing solution comprises hydrochloric acid.

27 (New) Method according to claim 18 wherein after steps a) and b) there is a sample staining step.

28. (New) Method according to claim 27 wherein the staining is made with a Wright type solution.

29. (New) Method according to claim 28, wherein the sample containing the sperm is included in a medium similar to a suspension.

30. (New) Method according to claim 29, wherein the sample containing the sperm is

included in an agarose microgel.

31. (New) A kit for performing the method of claim 18 which comprises:

a) a DNA denaturing solution;

b) a single lysis solution to extract nuclear proteins, wherein the lysis solution does not contain a protein denaturing detergent; and

c) instructions for treating the sperm and evaluating the integrity of the chromatin/DNA of the sperm.

32. (New) The kit according to claim 31, wherein the lysis solution comprises sodium chloride between 1M and 3M , dithiothreitol (DTT) between 0.001M and 2 M, 2-amino-2 (hydroxymethyl)-1,3 propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.

33. (New) The method according to claim 21,wherein the non ionic detergent is Triton X-100.

34. (New) The method according to claim 29, wherein the medium is a microgel.